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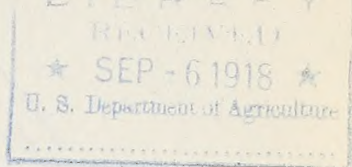


UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF ENTOMOLOGY,  
WASHINGTON

FOREST ENTOMOLOGY BRIEF 3.

March 3, 1916.  
(Revised August 19, 1918.)

K E R O S E N E E M U L S I O N



Materials and Amounts for Stock Mixture.

- (a) Kerosene . . . . . 2 gallons
- (b) Laundry or fish oil soap . . . . . 1/2 pound
- (c) Water . . . . . 1 gallon

Preparation.

- (1) Dissolve the soap in boiling water.
- (2) Remove the solution from fire, promptly add the kerosene and **thoroughly agitate** the mixture for about 5 minutes until it becomes creamy—an emulsion. Where a pump is used the agitation is most effectively done by pumping the mixture through the nozzle back into the original container for several minutes.

**Note.** To avoid boiling, a **naphtha soap** may be used, but the quantity of soap must be doubled and the water must be **soft** (rain water).

Dilution.

To each **two gallons of water** add emulsion:  
In Fall and Winter - 1 gallon.  
In Summer - 1/3 gallon.

Application.

**Aim to cover every insect.**

Use any spraying device at hand: a tin atomizer is not too crude for small plants and power sprayers with fine nozzles are a necessity for extensive operations. Potash soaps and warm solutions, well strained, prevent clogging of nozzles.

**Note.** Any of the standard brands of miscible oils on the market may be used in place of Kerosene Emulsion for spraying the bark of trees or shrubs. Directions for use are on the containers and should be followed **carefully**.

**Poisoned Emulsion for Spraying Trees against Borers.**

A number of species of tree borers are killed while young by spraying the bark at the proper time with the following preparation:

In each gallon of water used for diluting Kerosene Emulsion or miscible oil dissolve one ounce of sodium arsenate or sodium arsenite.

A. D. HOPKINS,

Forest Entomologist.

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EXAMINATION OF THE BEEHIVE

- (1) Entrance and adjacent the back entrance.
- (2) Entrance . . . . . 1 gallon
- (3) Entrance . . . . . 1 gallon
- (4) Entrance . . . . . 1 gallon

Preparation.

(1) Prepare the hive in the winter.  
 (2) Prepare the hive in the summer and  
 thoroughly examine the hive about 5 minutes before  
 it is opened. When a hive is used the  
 entrance is most likely used by passing the entrance  
 through the front door into the typical entrance for  
 (winter) entrance.  
 Here, a small bottle of ammonia soap may be used, but the  
 quantity of soap should not exceed 1/2 gallon and be  
 sold (rain water).

Inspection.

In case two gallons of water are used:  
 1/2 gallon of water - 1 gallon.  
 In case - 1/2 gallon.

Agitation.

As in some every season.  
 The entrance is to be kept in the winter in case the bees  
 are not in the hive. This is done by a necessity for  
 the entrance to be kept in the winter. The entrance is  
 kept closed in winter.  
 The entrance is to be kept in the winter in case the bees  
 are not in the hive. This is done by a necessity for  
 the entrance to be kept in the winter. The entrance is  
 kept closed in winter.

Prevention of Entrance for Spring and Summer.

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